APL Libraries and Linker Issues

Problem:

Linker errors while linking to APL static library for Windows.

Applies to:

Code that links to the static version of the APL library for Windows.
Does not apply to code that links to the dynamic DLL (shared) version of the APL library for Windows, or any non-Windows version of the APL library.

Cause:

APL static libraries for Microsoft® Windows® have a dependency on Microsoft Visual C++ 2005 C run-time libraries. The project (executable or DLL) also has a dependency on the C run-time library. The linker automatically links to the run-time library used by the static APL library as well as to the run-time library specified in the project settings. A version mismatch between the library in the static APL library and the library specified in the project can cause the linker to display error messages and terminate.

Resolution:

Use a static run-time library in the project.

When linking to a release version of the static APL library, use the **/MT** compiler switch in the project settings. This links the project to the same static multithreaded version of the run-time library used by the static APL library.

When linking to a debug version of the static APL library (common in debug configurations), use the **/MTd** compiler switch in the project settings. This links the project to the static multithreaded debug version of the run-time library.

More information:

Nearly all code generated by the Visual C++ compiler has some dependency on the C run-time libraries.

Microsoft provides several different flavors of the run-time libraries (static vs. dynamic (DLL), debug vs. release), and functions are implemented differently in each flavor. These differences can cause linker errors if a project is linked to the wrong library flavor. The run-time library flavor is normally specified by a compiler switch (**/MT**, **/MTd**, **/MD**, **/MDd**). Mixing different library types in the same module (executable or DLL) can also lead to various linker or run-time issues, and is not recommended.

For more information about the flavors of Microsoft Visual C++ 2005 C run-time libraries see:

http://msdn2.microsoft.com/en-us/library/2kzt1wy3(VS.80).aspx

http://support.microsoft.com/kb/154753